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DEPARTMENT OF PUBLIC NORMS WASTE MANAGEMENT DIVISION

TANK REMOVAL GEOLOGIC REPORT

FOR

Chrysler Motors Nu-Car Prep Center 12140 Slauson Avenue Santa Fe Springs, CA

March 31, 1988

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PETROLEUM INDUSTRY CONSULTANTS, INC.

7261 Mars Drive, Huntington Beach, CA 92647 714-842-6331 FAX: 714-842-6537

INTRODUCTION

Representatives from Chrysler Motors contracted with Colorado Pacific Constructors, Inc., to remove from their 40 acre facility ten (10) underground storage tanks and seven (7) concrete clarifiers (see Figure 1; Site Location Map). removal operations were conducted March 16, 1988. excavation, one (1) 10,000 gallon gasoline tank, two (2) 6,000 gallon gasoline tanks, two (2) 3,000 gallon gasoline tanks, five (5) 550 gallon waste oil tanks and seven (7) concrete lined clarifiers of various capacities were uncovered and removed from twelve (12) separate tank pits. In accordance with tank removal permits #4117B and #4118B, issued by the Los Angeles County . Department of Public Works Engineering Services Division, the required soil samples were recovered from under the tanks and clarifiers and chemically analyzed to document the subsurface soil conditions. Because seven (7) soil samples exhibited elevated total petroleum hydrocarbon (TPH) concentrations, excavation/deeper sampling operations were subsequently conducted as detailed below.

Petroleum Industry Consultants (PIC) was contracted (inhouse job #E921) to provide a geologist on site to: 1) conduct a visual inspection of lithology; 2) recover the specified soil samples from the bottom of the tank pits; 3) oversee subsequent laboratory testing of all soil samples; 4) supervise excavation and deeper sampling operations; and 5) prepare this geologic report of tank removal and excavation operations. This report documents the field procedures and test results for samples recovered during the excavation and laboratory evaluation of these tank pit sites.

PROCEDURE

Tank removal excavation was completed the afternoon of March 17, 1988. A backhoe was used to remove soil from above and beside the tanks (see Figure 2, Site Sketch Maps). After lower explosion levels registered below 10 percent in the tanks, onsite City of Santa Fe Springs Fire Inspector Boettcher allowed removal operations to continue. The tanks were loaded onto trucks by a crane and transported to an appropriate tank disposal site (see Appendix C: Tank Disposal Verification). Identification data obtained from tags removed from the tanks are given below:

SIZE/GAL	_ MFG	YEAR	CONTENTS	U. L. NO.	LOCATION	SAMPLE
3900	Buehler	1963	U/L Gasoline	E583621	1	P1, P2
3000	Buchler	1963	U/L Gasoline	E672513	1	P3, P4
1000	Concrete	-	Clarifier	-	2	P8
750	Concrete	-	Clarifier	-	4	P9
50 00	Concrete	-	Clarifier	-	5	P10
19999	N/A	N/A	U/L Gasoline	N/A	6	P13, P14
6000	Buchler	N/A	U/L Gasoline	H289856	10	P17, P18
6000	Buehler	N/A	U/L Gasoline	H880858	16	P16, P19
500	Concrete	-	Clarifier	-	15	P20
550	N/A	N/A	Waste Oil	N/A	16	P22
550	N/A	N/A	Waste Oil	N/A	16	P23
550	N/A	N/A	Waste Oil	N/A	16	P24
550	N/A	N/A	Waste Oil	N/A	16	P25
550	N/A	N/A	Waste Oil	N/A	17	P2.1
6 0 0	Concrete	-	Clarifier	•	9	P26
5 0 0	Concrete	-	Clarifier	-	11	P28
1000	Concrete	-	Clarifier	_	12	P27

To facilitate transport and visual inspection for structural integrity, the sides and bottom of the tanks wee scraped to remove excess soil.

Contamination was noted at sites 1, 4, 15, 16, and 17. After the tanks had been removed from the tank pits, PIC consulting geologist, Mr. Donald Prince recovered the required samples from beneath each tank via backhoe at a depth of 2 feet below tank or clarifier bottom. Each sample was collected in a glass jar and sealed with a teflon fined aluminum lid. The sample jars were placed on ice and transported to Chemical Research Laboratories for specified testing and analysis (see Appendix A; Chain of Custody). After tank removal operations and soil sampling were completed. March 17, 1988, the representative from PIC was released from the site.

Because elevated levels of total petroleum hydrocarbons
(TPH) were measured in seven samples at five sites, PIC

9

representatives returned to the site March 21-25, 1988, to supervise excavation of contaminated soil. Track mounted, large bucket, excavation machinery was used to remove apparent contaminated soil from the tank pits (see Figure 2; Site Sketch Maps). Excavation proceeded to various depths (maximum of 25 feet) until soil no longer exhibited olfactory or visual evidence of contamination. A photoionization detector was used to document soil conditions in the field. Soil samples were recovered from the bottom of the excavated pits and from each of the pit walls. The wall samples were recovered from depths of 9-18 feet as appropriate. These samples were sealed, stored, and transported according to standard chain of custody procedures already described. Would 1000 cubic yards of contaminated sould was excavated from the impacted sites and subsequently hauted to a Class I disposal facility (see Appendix D; Hazardous Waste Manifests).

GEOLOGY

A visual inspection of the stratigraphy exposed along the sides and bottom of the tank pits and excavated areas revealed that the predominant soil type from ground surface to a depth of 25 feet was a brown, moist, semi-cohesive, claystone. The backfill material consisted of this same native soil.

The elevation of the tank pit site is approximately 148 feet above sea level; the surrounding topography slopes irregularly southwest from the Puente Hills (see Figure 3; Area Topographic Map). The groundwater contour map published by the L.A.C.F.C.D. shows the most likely direction of groundwater flow to be

southwesterly. Depth to the first principal aquifer beneath the **

*i-te_is approximately 45 feet below surface; semi-perched zones

may occur at shallower depths (see Figure 4; Groundwater Contour

Map).

TESTING AND RESULTS

The soil samples were transported to Chemical Research Laboratories, 7440 Lincoln Way, Garden Grove, California for specified quantitative testing of total petroleum hydrocarbons (TPH) via EPA Methods 8015 and 418.1. Subsequent laboratory results from excavation operations, indicate substantially all contaminated soil was removed from the impacted sites at this facility. Mail final samples exhibited TPH concentrations of 422 ppm or less with the exception of samples P3-B which exhibited jevels slightly above background at 110 ppm. As already mentioned, all contaminated soil removed during tank removal and excavation operations has been hauled from the site to a Class I disposal facility (see Appendix D; Hazardous Waste Manifests). Clean pea gravel or other fill material was imported to backfill all excavated tank pits as necessary. PIC recommends no additional remediation measures at this site.

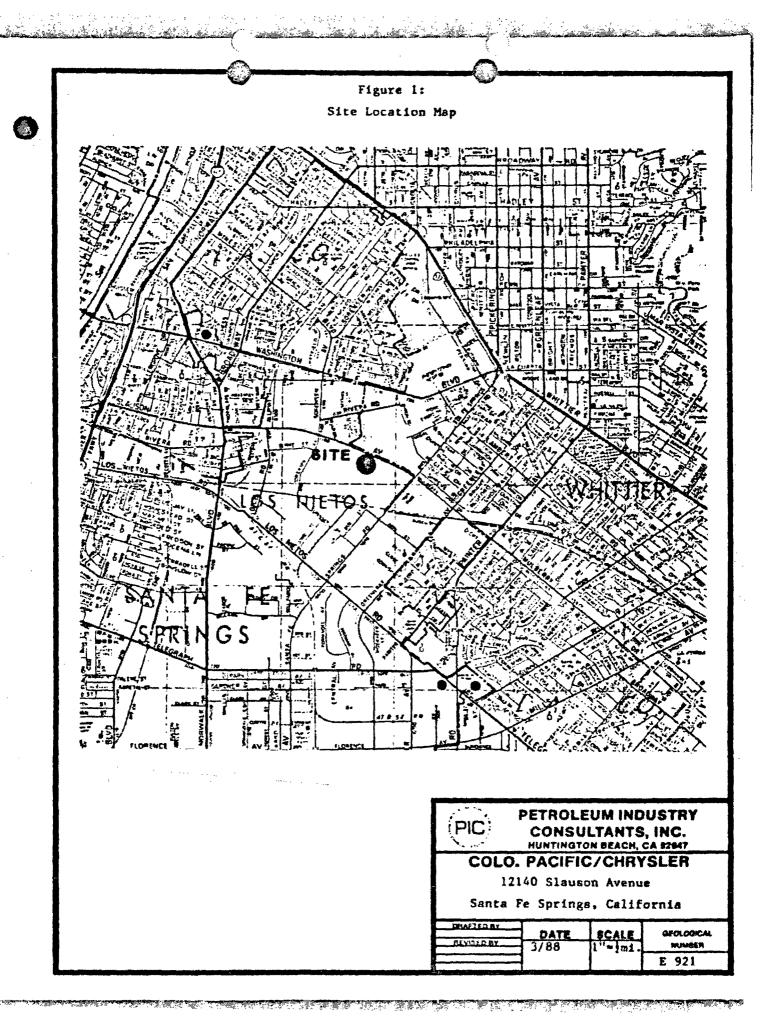
This report is <u>proprietary</u> and <u>confidential</u>, to be delivered to, and intended for the exclusive use of, the above named client only. Petroleum Industry Consultants, Inc. assumes no responsibility nor liability for the reliance herein or use hereof by anyone other than the above named client. In addition, all of the lab work cited in this report was prepared under the supervision of Bob Sundberg, Mike Hiatt, Roberta Fox, or Robert

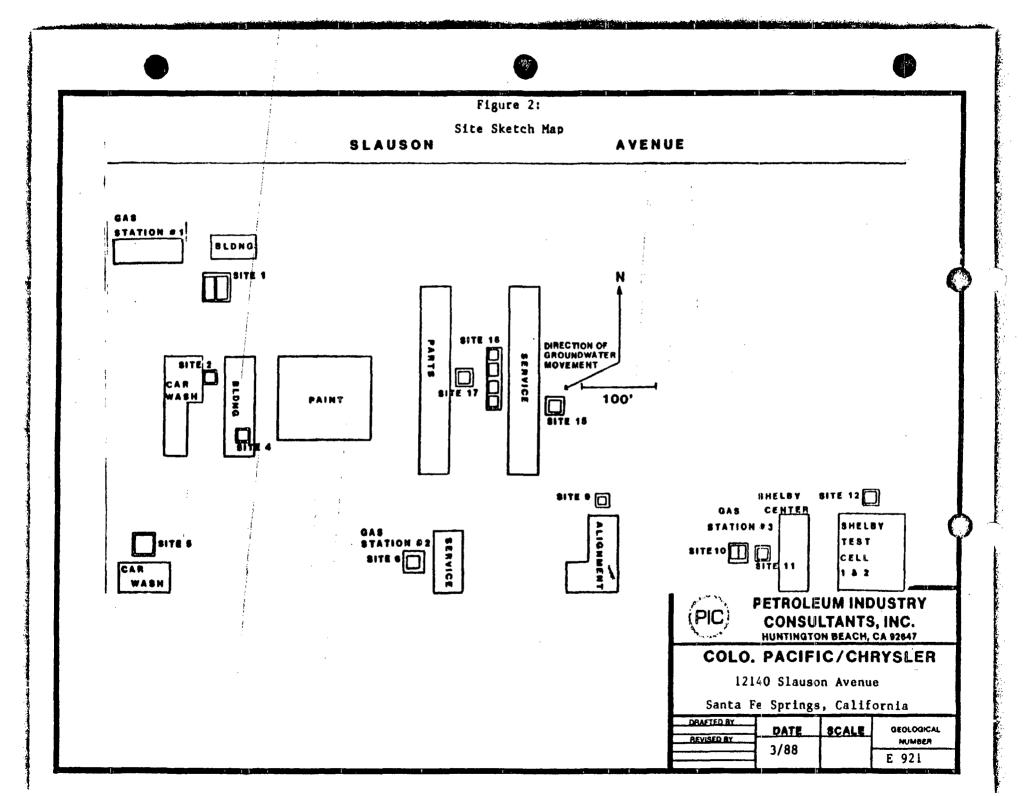
Bentley of Chemical Research Laboratories, Garden Grove. solely responsible for the contents and conclusions

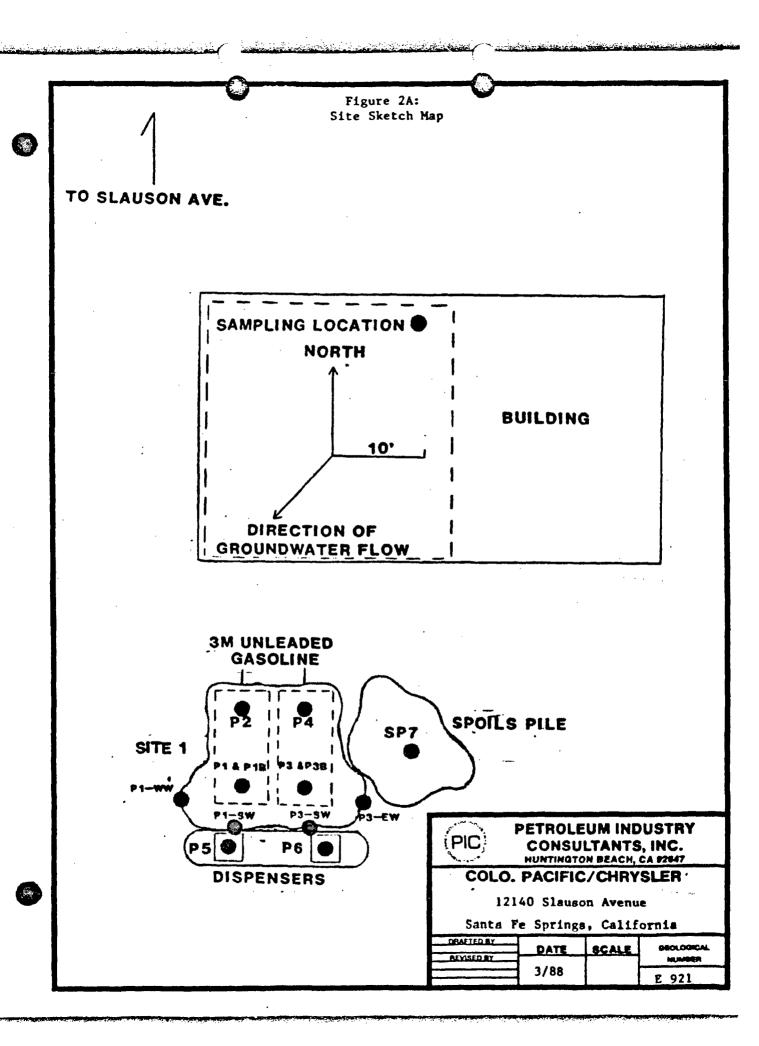
Should you have any additional questions or comments laboratory data. regarding the procedures or results outlined in this please do not hesitate to call us at 714/842-8331.

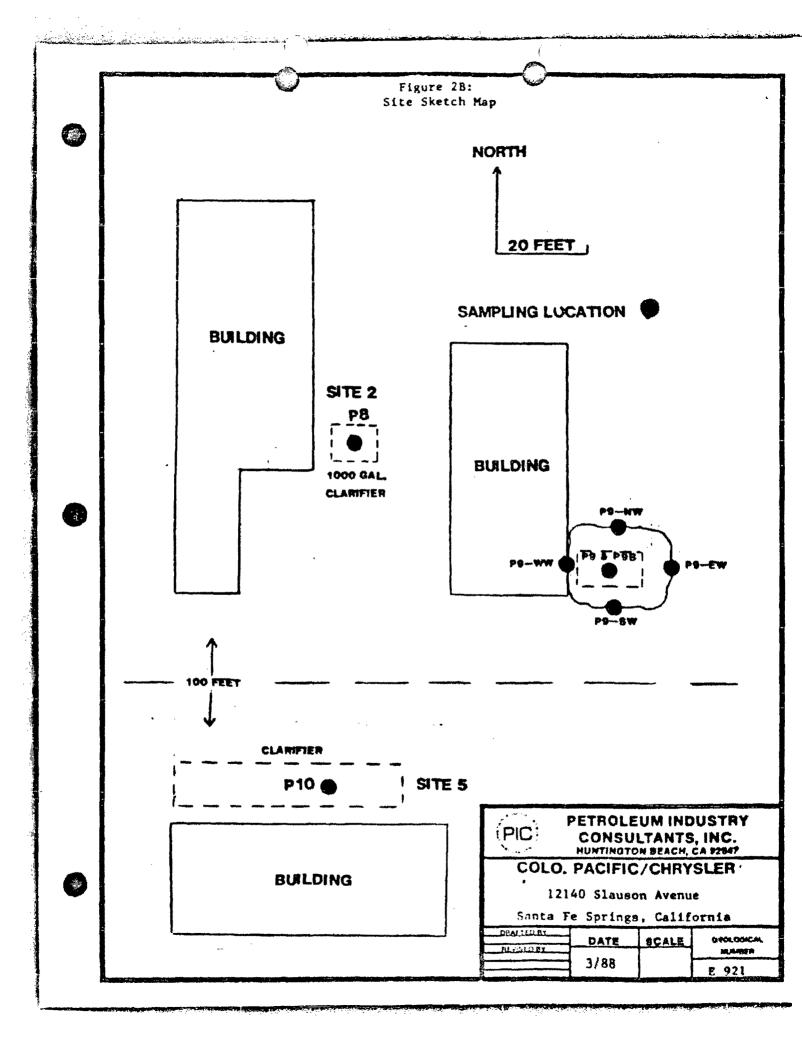
Respectfully submitted.

J. T. Hersch California Register









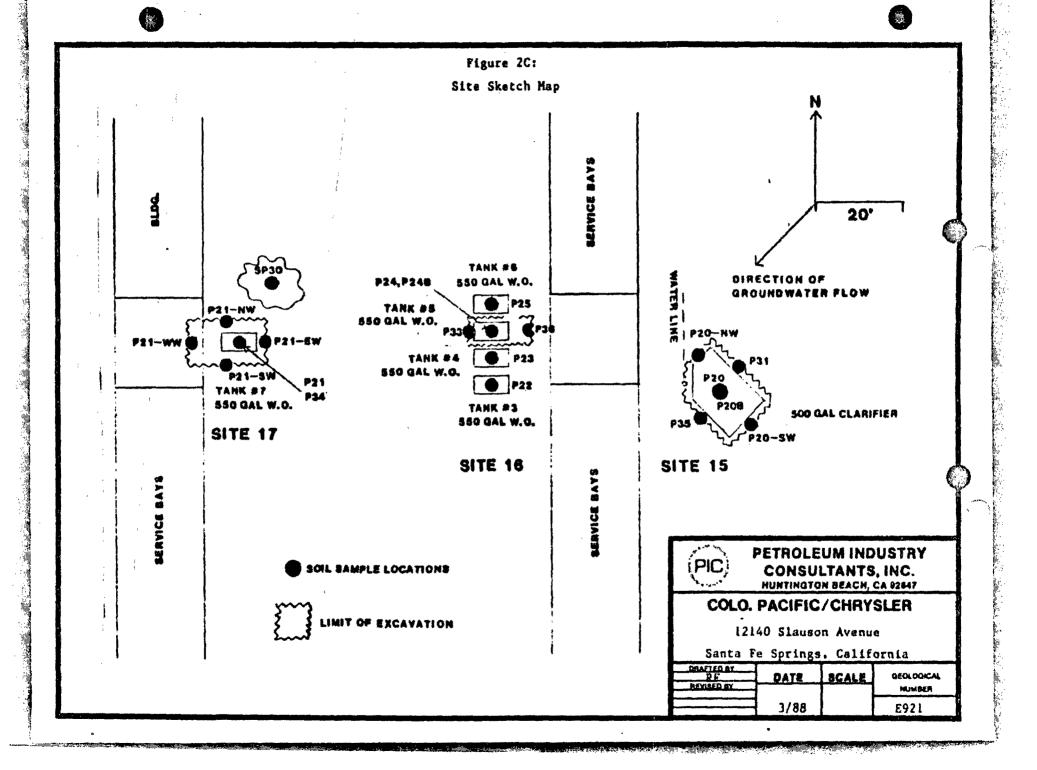
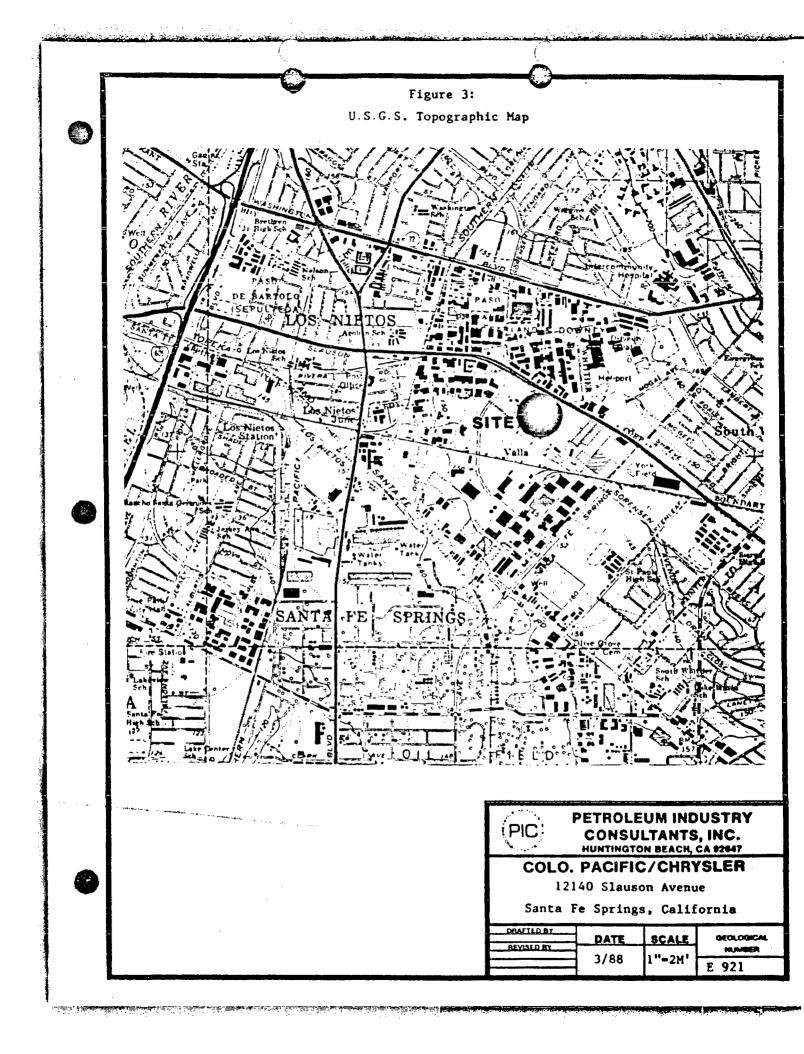
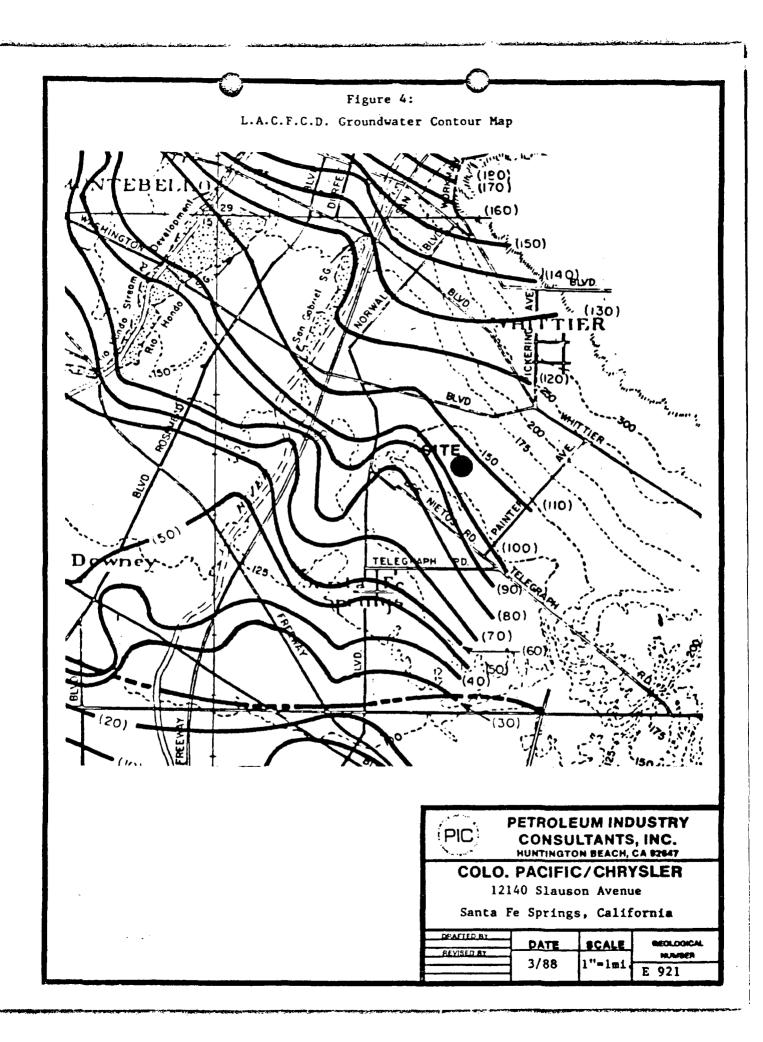


Figure 2D: Site Sketch Map SITE 9 GAS STATION #2 SERVICE SAMPLING LOCATION 50' PETROLEUM INDUSTRY PIC: CONSULTANTS, INC. HUNTINGTON BEACH, CA 97647 COLO. PACIFIC/CHRYSLER 12140 Slauson Avenue Santa Fe Springs, California DRAFTLDRY OFOLOGICAL DATE **BCALE** MANDER 3/88 E 921

Figure 2E: Site Sketch Map SITE 11 SITE 12 SPOILS PILE SHELBY **TEST** U/L GAS CENTER CENTER #182 SITE 10 SAMPLING LOCATION 50' DIRECTION OF GROUNDWATER MOVEMENT PETROLEUM INDUSTRY PIC CONSULTANTS, INC. HUNTINGTON BEACH, CA 92647 COLO. PACIFIC/CHRYSLER 12140 Slauson Avenue Santa Fe Springs, California CRAFTLEBY GROLDOICAL DATE BCALE ALXINED BY NUMBER 3/88 E 921





APPENDIX A:

CHAIN OF CUSTODY

APPENDIX B:

LAB RESULTS



7440 Ercoin Way - Gerden Grove, CA 92641 (714) 896-4370 - (213) 598-0458

March 21, 1988

PETROLEUM INDUSTRY CONSULTANTS
7261 Mars Drive
Huntington Beach, CA 92647
ATTN: Tim Hersch

ANALYSIS NO.: 807612-001/025 ANALYSES: EPA Method 418.1, 8015-M

DATE SAMPLED: 03/16/88

DATE SAMPLE REC'D: 03/16/88

PROJECT: E921 Colo. Pacific Const/ Chrysler

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 807612-001/025 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Verbals were given March 18, 1988 at 8:20 a.m.

Please note that ND() means not detected at the detection limit expressed within the parentheses.

REVIEWED AND APPROVED



7440 Lercoln Way - Garden Green, CA 92641 (714) 898-4379 - (213) 598-6458

LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS

7261 Mars Drive

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 807612-001/025

ANALYSES: EPA Method 418.1, 8015-M

DATE SAMPLED: 03/16/88

DATE SAMPLE REC'D: 03/16/88

DATE ANALYZED: 03/17/88

SAMPLE TYPE: Solid

PROJECT: E921 Colo. Pacific Const/

Chrysler

SAMPLE IDENTIFICATION	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS EPA METHOD 418.1 (mg/kg)	TOTAL VOLATILE PETROLEUM HYDROCARBONS EPA METHOD 8015-M (mg/kg)
11 (10) (10) (10) (10)	*	730.
2		ND(1.)
23	www.	1,200.
4 ••••••••••••••••••••••••••••••••••••		ND(1.)
-	en e	ND(1.) 5.
6 (1) 2 (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Company of the Compan	25.
8	9.1	
9	3,100.	
10	ND(1.)	
11	\ \	ND(1.)
12	•	ND(1.)
13		ND(1.)
14	and the second s	4.
L J		5.
	Note that the second of the se	ND(1.)
1/	The second secon	ND(1.)
18 19	entre de la companya	ND(1.) ND(1.)
20	490.	un(**)
20 21 .	25,000.	
22	£ 9	
23	72 4 m	
24	7,200.	· · · · · · · · · · · · · · · · · · ·
25	ND(1.)	The same of the sa



7440 Lyncoln Way - Carden Grove, CA 92641 (714) 896-6370 - (213) 586-0456

March 22, 1988

PETROLEUM INDUSTRY CONSULTANTS
7261 Mars Drive
Huntington Beach, CA 92647
ATTN: Tim Hersch

ANALYSIS NO.: 807708-001/005 ANALYSES: EPA Method 418.1, 8015-M DATE SAMPLED: 03/17/88 DATE SAMPLE REC'D: 03/17/88 PROJECT: E921 Colo. Pacific/

Chrysler

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 807708-001/005 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Verbals were attempted March 18, 1988 at 5:05 p.m.

Please note that ND() means not detected at the detection limit expressed within the parentheses.

HEVIEWED AND APPROVED



7440 Lincoln Way - Gerden Grove, CA 92641 (714) 698-6370 + (213) 598-0436

LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS

7261 Mars Drive

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 807708-001/005

ANALYSES: EPA Method 418.1, 8015-M

DATE SAMPLED: 03/17/88

DATE SAMPLE REC'D: 03/17/88

DATE ANALYZED: 03/18/88

SAMPLE TYPE: Solid

PROJECT: E921 Colo. Pacific/

Chrysler

SAMPLE IDENTIFICATION	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS EPA METHOD 418.1 [mg/kg]	TOTAL VOLATILE PETROLEUM FUEL HYDROCARBONS EPA METHOD 8015-M (mg/kg)
P27	19.	·
P28	2.5	
SP29		ND(1.)
SP30	14,000.	
P26	4.9	



²440 Ericcin Way + Garden Grove, CA 92641 [714] 896-6370 + [213] 598-0458

March 23, 1988

PETROLEUM INDUSTRY CONSULTANTS
7261 Mars Drive
Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 808118-001/004
ANALYSES: EPA Method 418.1
DATE SAMPLED: 03/21/88
DATE SAMPLE REC'D: 03/21/88
PROJECT: E921.1 Colo Pacific/
Chrysler/Santa Fe Springs CA

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 808118-001/004 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Verbals were given March 22, 1988 at 3:30 p.m. Randell Ferguson.

Please note that ND() means not detected at the detection limit expressed within the parentheses.

REVIEWED AND APPROVED



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LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS 7261 Mars Drive

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 808118-001/004 ANALYSES: EPA Method 418.1 DATE SAMPLED: 03/21/88

DATE SAMPLE REC'D: 03/21/88 DATE ANALYZED: 03/22/88

SAMPLE TYPE: Solid

PROJECT: E921.1 Colo Pacific/ Chrysler/Santa Fe Springs CA

TOTAL RECOVERABLE
PETROLEUM
HYDROCARBONS
EPA METHOD 418.1
(mg/kg)

SAMPLE IDENTIFICATION

P20-B

P20-SW; P20-NW (Composite)

P20-EW

P20-WW

21.

5.6

1,500.

630.



7440 Errosh Way - Garden Grove, CA 92641 (714) 898-8370 - (213) 598-8458

March 25, 1988

PETROLEUM INDUSTRY CONSULTANTS
7261 Mars Drive,
Huntington Beach, CA 92647
ATTN: Tim Hersch

ANALYSIS NO.: 808112-001/006 ANALYSES: EPA Method 8015/418.1 DATE SAMPLED: 3/21/88

DATE SAMPLE REC'D: 3/21/88
PROJECT: E921.1 Colo Pacific/

Chrysler

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 808112-001/006 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

REVIEWED AND APPROVED

This report pertains only to the semples investigated and does not necessarily seely to other apparently identical or similar materials. This report is submitted for the exclusive use of the Caborstery's name for advertising or subtack commons without authorization of this Caborstery's name for advertising or subtack commons without authorization is subsidiar



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LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS

7261 Mars Drive,

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 808112-001/006 ANALYSES: EPA Method 8015/418.1

DATE SAMPLED: 3/21/88

DATE SAMPLE REC'D: 3/21/88 DATE ANALYZED: 3/22-23/88

SAMPLE TYPE: Solid

PROJECT: E921.1 Colo Pacific/

Chrysler

TOTAL RECOVERABLE PETROLEUM HYDROCARBON EPA METHOD 418.1 SAMPLE IDENTIFICATION (ma/ka)

TOTAL VOLATILE PETROLEUM FUEL HYDROCARBON EPA METHOD 8015-M (mq/kq)

14.

110.

P21-W (P21-WW, EW, SW, NW) 18' (comp.)

P1-B 18'

P3-B 18'

P21-B 21'

P24-B 11'

P24-W (P24-WW, EW) 9' (comp.)

200.

29.

42.

4,600.



7440 Lincoln Way - Garden Grove, CA 92641 (714) 898-8370 · (212) 598-0458

March 25, 1988

PETROLEUM INDUSTRY CONSULTANTS 7261 Mars Drive Huntington Beach, CA 92647 ATTN: Tim Hersch

ANALYSIS NO.: 808120-001/008 ANALYSES: EPA Method 418.1, 8015-M DATE SAMPLED: 03/21/88

DATE SAMPLE REC'D: 03/21/88 PROJECT: E921.1 Colo. Pacific/

Chrysler

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 808120-001/008 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Verbals were given March 23, 1988 at 4:45 p.m. to Mr. Randell Ferguson.

Please note that ND() means not detected at the detection limit expressed within the parentheses.



7440 Lincoln Way - Garden Grove, CA 92941 (714) 898-6370 - (213) 588-8458

LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS

7261 Mars Drive

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 808120-001/008

ANALYSES: EPA Method 418.1, 8015-M

DATE SAMPLED: 03/21/88

DATE SAMPLE REC'D: 03/21/88
DATE ANALYZED: 03/22-23/88

SAMPLE TYPE: Solid

PROJECT: E921.1 Colo. Pacific/

Chrysler

SAMPLE IDENTIFICATION	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS EPA METHOD 418.1 (mg/kg)	TOTAL VOLATILE PETROLEUM HYDROCARBONS EPA METHOD 8015-M (mg/kg)
P9B	6.2	
P9WW	8.9	
P9EW	8.8	
P9NW	7.8	
Plsw, P3SW (Composite)		1.
Plww	The second secon	1.
P3EW		ND(1.)
POCH		



7440 Lincoln Way - Garden Grove, CA 92641 (714) 898-4370 - (213) 566-0456

March 28, 1988

PETROLEUM INDUSTRY CONSULTANTS
7261 Mars Drive,
Huntington Beach, CA 92647
ATTN: Tim Hersch

ANALYSIS NO.: 808401-001/005 ANALYSES: EPA Method 418.1 DATE SAMPLED: 3/23/88 DATE SAMPLE REC'D: 3/24/88 PROJECT: E921 Colorado Pacific Santa Fe Springs

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 808401-001/005 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

REVIEWED AND APPROVED



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LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS

7261 Mars Drive,

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 808401-001/005

ANALYSES: EPA Method 418.1

DATE SAMPLED: 3/23/88

DATE SAMPLE REC'D: 3/24/88
DATE ANALYZED: 3/24/88

SAMPLE TYPE: Solid

PROJECT: E921 Colorado Pacific

Santa Fe Springs

TOTAL RECOVERABLE
PETROLEUM FUEL HYDROCARBON
EPA METHOD 418.1

(mq/kq)

SAMPLE IDENTIFICATION

P31 Site 15 Eastwall-18'

P32 Site 16 Eastwall-9'

P33 Site 16 Westwall-9'

P34 Site 17 Bottom-25'

P35 Site 15 Westwall-18'

2.

7,400.

12.

12.

6.



7440 Eircoin Way - Garden Grove, CA 92641 (714) 826-6370 - (213) 568-6458

March 29, 1988

PETROLEUM INDUSTRY CONSULTANTS 7261 Mars Drive Huntington Beach, CA 92647 ATTN: Tim Hersch

ANALYSIS NO.: 808514-001
ANALYSES: EPA Method 418.1
DATE SAMPLED: 03/25/88
DATE SAMPLE REC'D: 03/25/88
PROJECT: E921.1 Colo Pacific/
Chrysler

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 808514-001 shown above.

The samples were received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Verbals were given March 28, 1988 at 11:30 a.m. to Mr. Tim Hersch.

REVIEWED AND APPROVED



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LABORATORY REPORT

PETROLEUM INDUSTRY CONSULTANTS

7261 Mars Drive

Huntington Beach, CA 92647

ATTN: Tim Hersch

ANALYSIS NO.: 808514-001

ANALYSES: EPA Method 418.1

DATE SAMPLED: 03/25/88

DATE SAMPLE REC'D: 03/25/88

DATE ANALYZED: 03/28/88

SAMPLE TYPE: Solid

PROJECT: E921.1 Colo Pacific/

Chrysler

TOTAL RECOVERABLE
PETROLEUM
HYDROCARBONS
EPA METHOD 418.1
(mg/kg)

SAMPLE IDENTIFICATION

P36

2.